



# Heroin Deaths In Victoria 2005

## Victorian Institute of Forensic Medicine

### Department of Forensic Medicine – Monash University

**MONASH** University

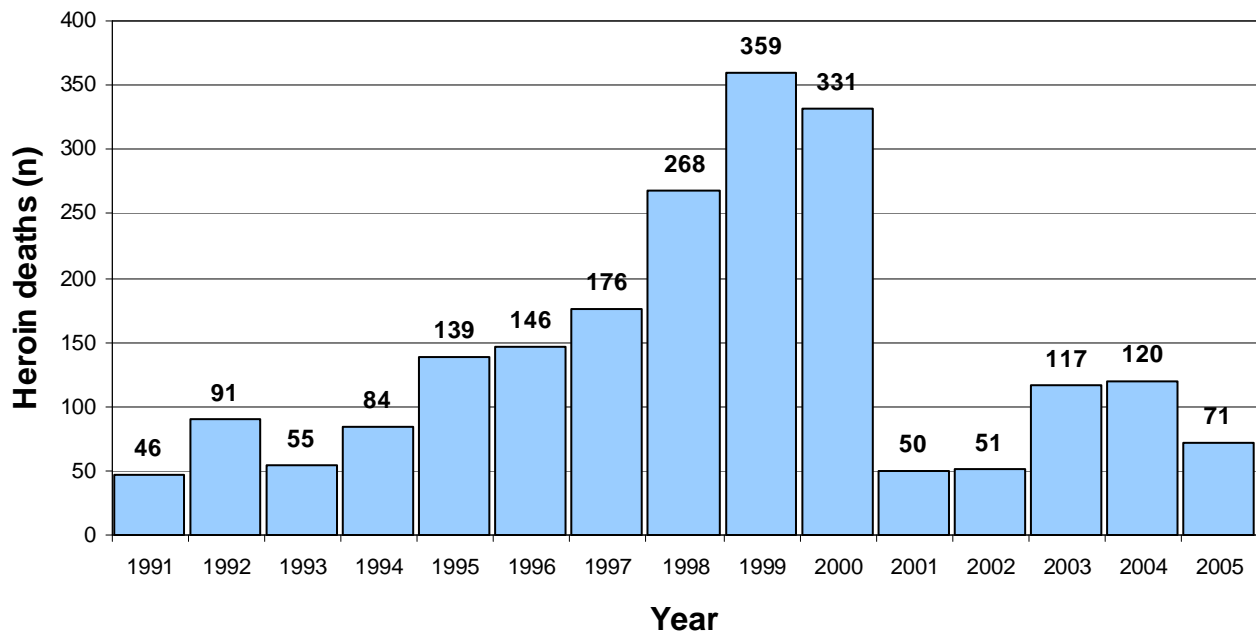
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## Introduction

This is the ninth newsletter in a series of reports focusing on heroin-related deaths in Victoria. In 2000, Victoria registered 331 deaths from the use of heroin. Following a dramatic decrease in 2001 (n=50), Victoria has seen a gradual increase resulting in somewhat stable figures over the last four years, and even a decrease in 2005 (n=71). Since 1991 the total number of deaths in Victoria resulting from the use of heroin is 2104. This report presents a detailed summary of heroin-related deaths in Victoria for the year 2005 and also makes comparisons to previous years.



**Figure 1.** Number of heroin-related deaths in Victoria by year (1991-2005).

## Subjects and Methods

The Victorian Institute of Forensic Medicine (VIFM) is a statutory body with responsibility to oversee and provide forensic pathology and related services in Victoria. The Institute conducts some 3500 medico-legal death investigations each year at its own facilities where it also performs the toxicological analyses in these cases, as well as in those investigations undertaken in regional centres.

Deaths were classified as being heroin-related if the circumstances suggested the death was caused by the use of heroin and/or the cause of death is at least in part attributed to the effect of heroin. This definition also includes cases where natural disease and/or injuries found at autopsy resulting from heroin use have contributed to death (eg hypoxic brain injury). The toxic effects of drugs in addition to heroin may also contribute in part to the cause of death in heroin users.

In all the cases included in this report, investigations (including autopsies) were undertaken by full time forensic pathologists at the VIFM or by other pathologists at regional hospitals in Victoria. Autopsy included macroscopic and microscopic examination of all the major organs. All cases were subject to a full toxicological examination.

## Demographic data of heroin-related deaths

The number of deaths attributed to the intravenous use of heroin decreased dramatically in Victoria in 2001. After a considerable increase in 1999 (n=359) and 2000 (n=331), heroin-related deaths in Victoria decreased by 86% in 2001 (n=50). The cause of this decrease is generally regarded as being the result of reduced availability of heroin on the streets. Although experiencing an increase of heroin-related deaths from 2001 (n=50) to 2004 (n=120), Victoria has seen relatively stable figures over the last four years, and even a 41% decrease in 2005 (n=71).

### **SEX & AGE**

The percentage of heroin deaths which were male has averaged approximately 80% between 1991 and 2004 (Table 1), although data from 2005 indicates a higher percentage of male deaths (90%) to female deaths (10%). The mean age of both males and females has slightly increased from 1991-2005, from approximately 28 years to approximately 33 years.

TABLE 1	Male					Female				
	Year	2001	2002	2003	2004	2005	2001	2002	2003	2004
Heroin deaths(n)	39	61	95	96	64	11	17	22	24	7
Heroin deaths (%)	78.0	78.2	81.2	80	90.1	22.0	21.8	18.8	20	9.9
Mean age	28	32	33	34	34	29	32	28	33	31
Median age	27	30	31	34	33	31	31	27.5	32	31
Maximum age	44	53	55	57	21	47	51	47	50	20
Minimum age	18	18	19	17	53	20	15	15	21	40

### **OCCUPATIONS OF HEROIN USERS**

The majority of heroin-related deceased from 1991-2005 were unemployed (~50%), other occupations of those remaining are shown below. Table 2 shows data from 2001-2005.

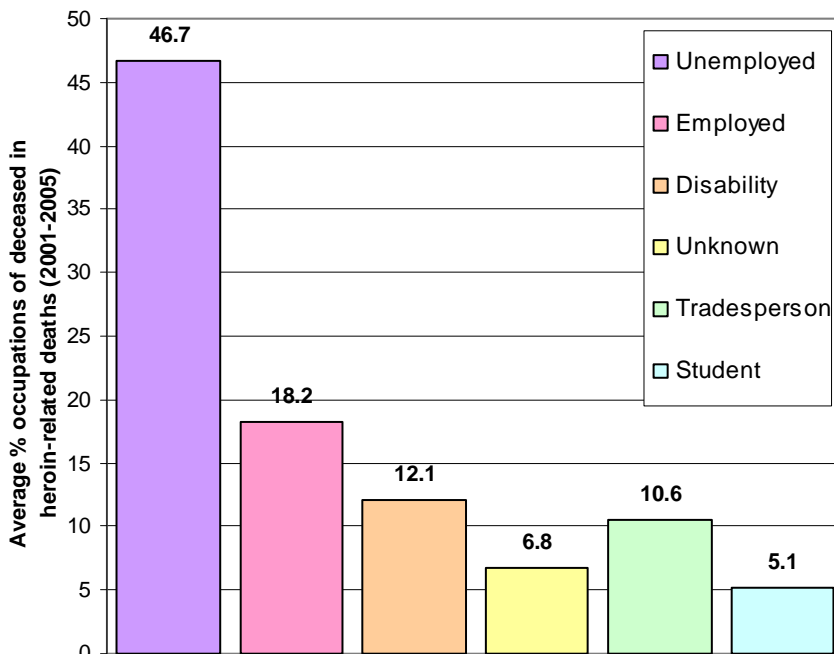


TABLE 2	2001	2002	2003	2004	2005
Unemployed	22	26	51	60	32
Employed	7	5	35	26	11
Pensioner/ Disability	11	7	9	14	4
Unknown	3	5	7	8	4
Tradesperson	3	4	11	7	17
Student	3	4	4	5	3

**Figure 3. Average percentage of occupations of deceased in heroin-related deaths (2001-2005).**

### **HEPATITIS C**

The presence of Hepatitis C in heroin-related deaths in Victoria over the past five years was assessed by serological testing. Of all cases from 2001-2005, 68% tested positive to antibodies for hepatitis C. Of those that were positive for hepatitis C, there was a similar proportion in both males and females. This figure has only increased marginally over the last seven years.

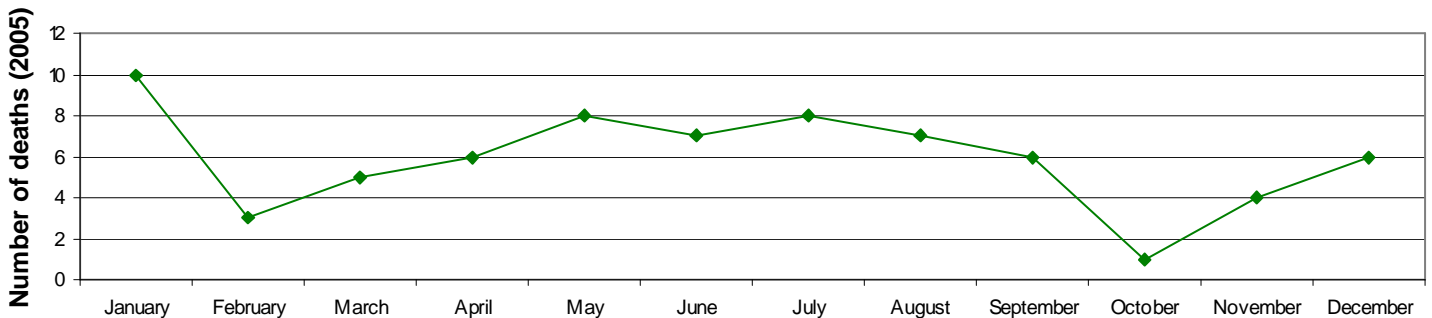
## GEOGRAPHICAL LOCATION OF DEATH

A review of all heroin-related deaths that occurred in Victoria since 2000 revealed that Melbourne CBD had the highest frequency (9.2%), followed by regional centres (9.0%), St Kilda (7.2%), Footscray (5.6%) and Dandenong (5.1%).



## MONTH OF DEATH

We have only recently started to report month of death in Victorian heroin-related fatalities. The graph below indicates this data from 2005, with interesting peak times occurring in January and mid year, and a low in October, with only one heroin-related death reported.



## Toxicology of heroin-related deaths

### HEROIN AND OTHER DRUG-RELATED DEATHS IN VICTORIA

Between 1991 and 2005, the proportion of heroin-related deaths compared to other drug deaths has varied greatly. Table 5 shows the percentage of heroin-related deaths between 2001 and 2005, as compared to other drug-related deaths. In the main, other drug related deaths are suicidal or accidental in nature.

TABLE 5	Heroin deaths (n)	Drug deaths (n)	% Heroin related
2001	50	185	21%
2002	78	172	31%
2003	117	166	41%
2004	120	121	50%
2005	71	149	32%

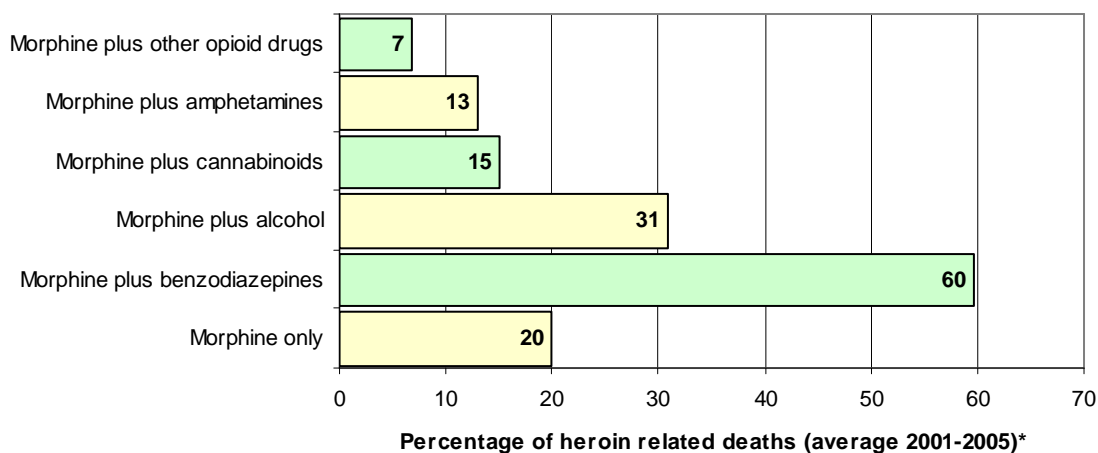
## **PRESENCE OF OTHER DRUGS 2001-2005**

As many readers may be aware, heroin is converted very rapidly to morphine upon injection, and this is what is measured toxicologically.

Overall the data from 2001-2005 shows that benzodiazepines are found in 60% of all deaths involving heroin use. Alcohol was detected in 31% of all cases, and in 20% morphine alone was detected. The combined use of amphetamines and heroin peaked in 2001 at 22% (Table 4). The prevalence of morphine use alone doubled from 16% in 2002 to 32% in 2003, but was remarkably steady from 2004 to 2005.

<b>TABLE 4 (%)</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>Overall*</b>
<b>Morphine only</b>	16	16	<u>32</u>	18	15	<b>20</b>
<b>Morphine + benzodiazepines</b>	<u>71</u>	67	48	59	54	<b>60</b>
<b>Morphine + alcohol</b>	31	24	31	<u>36</u>	34	<b>31</b>
<b>Morphine + cannabinoids</b>	22	12	9	11	21	<b>15</b>
<b>Morphine + amphetamines</b>	<u>22</u>	14	9	8	14	<b>13</b>
<b>Morphine + other opioid drugs<sup>#</sup></b>	4	6	7	8	8	<b>7</b>

\* Total percentage equals more than 100% as multiple combinations of other drugs were also present.  
<sup>#</sup> i.e. methadone, propoxyphene, oxycodone, etc.  
 Significant values are underlined.



**Figure 4. Average prevalence of drugs (%) in heroin-related deaths in Victoria (2001-2005).**

## **Summary**

- According to VIFM/SCO records, there have been a total of 2104 heroin-related deaths in Victoria from 1991-2005.
- The number of deaths attributed to the intravenous use of heroin decreased dramatically in Victoria in 2001. In 1991, the number of such deaths was 46. These had increased to 176 in 1997, 268 in 1998, 359 in 1999 and 331 in 2000. 2001 had only 50 heroin-related deaths in Victoria. This dramatic decrease reflected the heroin shortage at that time.
- Heroin-related deaths in Victoria had more than doubled from 2001 (n=50) to 2003 (n=117), which at the time raised concern for the possibility of a similar increase to that which happened during the 1990s, however a further increase did not occur in 2004, and numbers of heroin-related fatalities even decreased in 2005 (n=71). Similar numbers are expected in 2006 based on current information.
- The decrease in heroin-related deaths over the last few years may be attributed to the increasing popularity of amphetamine type stimulants in Victoria as an alternative for other drugs including heroin.

## **ACKNOWLEDGMENTS**

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